



# Udon enteropathy

Osamu Imataki \* and Makiko Uemura 

Division of Hematology, Department of Internal Medicine, Faculty of Medicine, Kagawa University, Kagawa, Japan

\*Correspondence address. Division of Hematology, Department of Internal Medicine, Faculty of Medicine, Kagawa University, 1750-1 Ikenobe, Miki-town, Kita-county, Kagawa, 761-0793, Japan. Tel: +81 878-91-2145; Fax: +81 878-91-2147; E-mail: imataki.osamu@kagawa-u.ac.jp

## Abstract

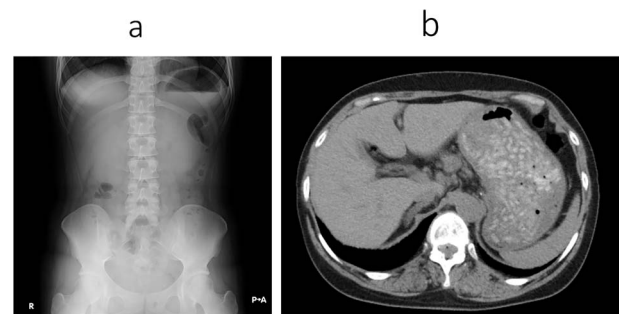
Japanese noodle ‘udon’ is an original Asian noodle popular in Japan. Udon is one of the most elastic noodle, and which is required to take more than several hours to digest in a certain case. We encountered a case of enteropathy caused by consumption of udon. A fifteen-year-old girl visited the outpatient clinic with a symptom of epigastralgia persistent from the previous night. She had eaten noodles for dinner the night before. Clinical images showed patient’s stomach filled with udon. Noodle-associated enteropathy is not rare in our community, however, there had not been reported in other Asian countries.

**Keywords:** enteropathy, Japanese noodle, dyspepsia

Early one morning, a 15-year-old Japanese girl visited the outpatient clinic with a symptom of epigastralgia persistent from the previous night. The patient was not suffering from vomiting. She had eaten noodles for dinner with her family the night before. None of the other members of her family complained of abdominal pain. Her physical examination showed mild tenderness in her middle-upper abdomen without rebound tenderness. Her bowel sound was normal and experienced no constipation. Her blood glucose was normal, and she had no episode of diabetes mellitus. Her abdominal X-ray demonstrated complete radiopacity of her stomach (Fig. 1a). CT scanning revealed that the patient’s stomach was completely filled with ribbon-shaped high density structures (Fig. 1b), which indicated undigested Japanese noodle ‘udon.’

Udon is one of the most popular Asian noodles, made from wheat flour. Among all globally available noodles made from wheat flour, including Italian pasta, Chinese noodle, Korean buckwheat noodle, and Japanese udon, udon is thickest. Any kind of wheat can be used to process udon noodles; original udon noodles are produced in our local community Kagawa, referred to as ‘Sanuki Udon,’ and are made using a traditional technique that gives it a special taste and texture. Among all the Asian noodles, udon is the most elastic. Its characteristic texture is because the dough is preserved for a night in ambient temperature before processing it in the form of ribbons, which are ready to be boiled and served. This is a unique process not used in other Asian noodles [1]. This manufacturing process develops a gluten matrix and keeps udon in the stomach for a longer time.

This is a case of enteropathy caused by consumption of Japanese noodle ‘udon.’ We diagnosed the patient as having ‘udon enteropathy,’ which was caused by functionally disturbed digestion in our speculation. We observed delayed gastric



**Figure 1.** Abdominal X-ray and abdominal CT. (a) Patient’s abdominal X-ray showed complete radiopacity of the stomach. (b) Patient’s abdominal CT scanning showed that the stomach was filled with ribbon-shaped high density structures.

emptying due to udon digestibility in the patient’s CT scanning. The physician recommended the patient to drink water and wait for a period of time. The patient was relieved from her abdominal symptoms in a couple of hours. The duration time from eating udon to release of symptoms were about six hours.

## CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to disclose. The authors declare that they have no competing interests.

## FUNDING

The authors have no funding source to disclose concerning this report. This work was supported by JSPS KAKENHI Grant Numbers JP23K11850.

Received: January 7, 2024. Revised: February 12, 2024. Accepted: February 20, 2024

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## **ETHICAL APPROVAL**

We obtained approval from the Kagawa University Hospital Institutional Review Board. The case report was approved by the institute's committee on human research.

## **CONSENT**

The patient had given their written informed consent to publish their case (including publication of images).

## **DATA AVAILABILITY**

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

## **REFERENCES**

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